

Simplify

$$1) \left( \frac{a^{-4(n+2)} b^{3n-6}}{a^{2n-8} b^{-3(n+2)}} \right)^{\frac{1}{3n}}$$

$$2) \left( \frac{x^{2(2n+1)} y^{2-n}}{x^{2(n+1)} y^{2+n}} \right)^{-\frac{1}{2}}$$

$$3) \sqrt{x^4 y} - x\sqrt{9x^2 y} + x^2\sqrt{16y}$$

$$4) \frac{1}{2}\sqrt{\frac{3}{4}} + \frac{1}{2}\sqrt{\frac{1}{3}} - 7\sqrt{75}$$

Factor Completely

$$5) (a + b)(x - 3) + (a + b)(x - 4)$$

$$6) 5c(a^3 + b^3) - (a^3 + b^3)$$

$$7) (r^2 - 1)^2 - (r - 1)^2$$

$$8) 6x^{2n} + 11x^n - 10$$